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ABSTRACT

This study focused on explaining the social character of text-based computer mediated communication (CMC), focusing on the outcomes of self esteem and "self reference." Subjects were 200 undergraduate students of a German university. Three perspectives of CMC were compared in this study: CMC as an impersonal situation, via mediated small groups, and as a hyperpersonal setting. Users of CMC report that the communication tends to be more direct and harder than face-to-face (ftf) interaction. Using Tajfel's Social Identity Theory (SIT) it was hypothesized that the computer-mediated communicators tend to have a greater self esteem. The second hypothesis tested is that CMC users tend to rely more on their own inner resources in forming opinions than on the opinions of others, (i.e. the ftf communicators). Results indicated that the CMC environment is not impersonal, although different from the ftf environment. CMC users were found to have greater self esteem and to be less dependent on the opinion, and less affected by the social influence of others. Four figures outline theoretical approaches of CMC, coupling of SIT and CMC use, expectations on self reference and self esteem in CMC, and statistics for self reference and self esteem. (Contains 14 references.) (AEF)

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Self esteem and self reference in computer mediated communication

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Summary

Computer meditated communication (CMC) is theoretically described by different approaches. These approaches draw a range of different pictures. To explain the social character of textbased CMC we compared those pespectives, reaching from CMC as impersonal situation (Kiesler 1984) via mediated small groups (Scholl 1995) to CMC as a hyperpersonal setting (Walther 1995).

Users of CMC report, that the communication tends to be more direct and harder than face-to-face (ftf) interaction. Using Tajfels Social Identity approach (S.I.T.) as a social psychological theory we hypothesized, that the communicators tend to esteem themselves in a more selfreferential way. That hypothesis bases on the mediums situation. The medium is distinguished by the limited number of possible perceptional qualities compared with an face-to-face interaction. However we took into account by using the same material for both, the CMC- and the ftf-group.

The second hypothesis tested, is that CMC users act in a more self-referential way. They are - indeed less dependent of the others opinion than ftf-communicators are. The social Einwirkung on others is less wirksam, we can show, that communicators in CMC are weaker determined by the others intention.

We conducted the investigation with a 2x2 multifactorial design, testing ftf vs. cmc groups. The study was done with undergraduate students of one German university.

Our results show, that the communicational situation is not impersonal, however different from the ftf-setting concerning the variables under investigation. Both variables, self esteem and self reference are increased in the cmc-setting.

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4. Abstract

Computer Mediated Communication (CMC) is described by different theoretical social psychologcal approaches. We focused on text-based CMC being either an impersonal situation, a mediated small group or a hyperpersonal setting.

The 100 examined CMC-users reported, that communication tends to be more straight forward than in face-to-face interaction. Using Tajfels Social Identity approach we hypothesized, that computer mediated communicators would esteem themselves more positively and in a more selfreferential way.

Our results confirmed, that CMC-users were less dependent on the opinion of others. Also, the social influence of others was judged to be less effective. Although communicating via computers is different from a face-to-face-setting, it can not be seen as being impersonal.

5. Introduction

5.1. Theoretical Background

Different theoretical approaches let us expect different patterns of behavior:

FIGURE: 3 THEORETICAL APPROACHES TO CMC

1. Social Cues Filtered Out Hypotheses (SCFO; Kiesler & Sproull 1986) - CMC as impersonal situation
2. Group Polarization (GP; Lea & Spears 1992) - CMC as small group process
3. Hyperpersonal Situation (HPS; Walther 1995) - CMC as communicational situation

5.1.1. Social Cues Filtered Out

FIGURE: SCFO (SPROULL & KIESLER 1995)

The basic assumption of the Social Cues Filtered Out approach is that CMC controls a number of psychological states and processes. Resulting from their empirical research Kiesler & Sproull state that CMC has far less normative influence on user's behavior. Also there is more extreme and deregulated behavior of groups than in FTF Communication.
To explain the influence of CMC on (inter-)individual behavior 2 results are highlighted: At first there is an empirically proven lower number of contextual information available, so called social context cues. This intensifies the deregulation of the communication and leads to lower status differences among the communicators. Secondly the qualitative and quantitative range of arguments and information in CMC is increased compared to FTF-communication. Let me sum up the SCFO's 5 mayor assumptions:

1. lack of social information
2. de-individuation
3. difficulties concerning coordination and feedback
4. depersonalisation and different focus of attention
5. conformity concerning norms belonging to the computer-subculture.

Finally we have to consider that the SCFO approach was developed due to very early experiments in the 1980's. At this time CMC was very young and relatively unknown. The average user was probably a member of a specific subculture, really a so-called „computer freak".

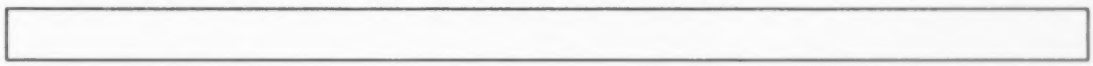
5.1.2. Small group processes in CMC

FIGURE: RSC/GP-APPROACH (SPEARS & LEA 1992)

The second approach I will focus on is related to Small Group processes in CMC. Based on Kiesler and Sproulls SCFO-approach Spears & Lea published 1992 an new system of findings, the so called Reduced Social Cues / Group Polarization (RSC/GP) - approach. It is currently the most comprehensive concept of CMC. The RSC approach begins with individual aspects and connects especially the depersonalization-theses with its resulting small group and orgnizational consequences. The concept allows the integration of most empirical and theoretical findings on CMC. Spears and Lea derive the process of group polarization in CMC as part of their concept.

5.1.3. Hyperpersonal Situation and optimized Self-presentation

FIGURE: DE-INDIVIDUATION UND HYPERPERSONAL SITUATION



Walther (1995) investigates the development of interpersonal impressions of a person. Using empirical data he shows increased impression-development in CMC vs. Face-to-Face communication. Based on this effect he argues, that CMC is not impersonal communication not interpersonal communication. Moreover CMC would enable new communicative skills, that he calls hyperpersonal communication.

Hyperpersonal communication extends beyond FTF interpersonal communication. Such communication is more socially desirable than FTF-Interaction. He argues with empirically found more positive judgment of computer mediated groups in comparison to FTF-Groups. Walther verifies his concept by finding higher values of CMC concerning intimacy, social and task orientation. He assumes, that the over-estimation of minimal information becomes more important in CMC than in FTF Communication. This assumption is related to Social Identity Deindividuation Theory (SIDE, Spears & Lea 1992), which explains the increase of subtle social-contextual and personal information if communication lacks of face-to-face contacts. This social-cues-filtered-out-hypotheses had been already postulated by Kiesler & Sproull (1984), as I mentioned before. The classic social psychological investigation on deindividuation was made by Festinger 1952. He was firs to coin the term „Deindividuation".

Following Walther's explanation we have to consider, that the sender optimizes the self-presentation towards a more selective self-presentation. This effect made possible although a reduced number of communicational cues and the mostly asynchronous communication. Therefore not only is self-awareness increased, but also reflection, selection and transmission of preferred communicational cues.

Overall the hyperpersonal communication is the product of the de-individuated situation.

5.2. The background

Next I will focus on the Social Identity Theory to use an elaborated social psychologal approach for CMC. Starting point for our theoretic and empiric investigation is the combination of Tajfel's SIT and of research - findings on CMC. Thus I will show the possibility and usefullness taking an established social psychological theory as a paradigm for investigating and describing computer mediated communication.

FIGURE: COUPLING OF SIT AND CMC BY USE OF THE MGP

issue	theoretical approach	empirical access
	SIT	CMC
problem	Does the SIT describe individual or social identity?	How do social processes function in CMC?
assumptions	Identity is a factor between the two poles of individual and social identity. Tajfel's theory stresses only the individual Pole.	CMC leads to higher self-reference and a more positive individual self-esteem.
explanation	Tajfel's experiments measure a deindividuating situation. Social context cues are not effective.	The media reduces social context cues dramatically. Feed back and publicity are far less effective.
connection	The experimentally designed minimal social situation is characteristic for the reality of CMC.	
characteristics of the situation	Conditions of the minimal-group-paradigm (Tajfel 1973): • no face-to-face interaction • anonymity of group-membership • random group-membership • no respondents use of behavior • seriosity of respondents behavior	
possible result	specification of the theory	understanding and explaining media

The minimal group paradigm is the nucleus for coupling the theoretical assumptions and empirical findings of the SIT. The basic conditions of the MGP are (Tajfel 1973):

- no face-to-face interaction
- anonymity of group-membership
- random group-membership
- respondents do not have any profit from their behavior

- seriousmindedness of respondents' behavior

These conditions are realized in most setting's of CMC:

- no face-to-face interaction is utilized in the computer-networks,
- anonymity of group-membership is given too,
- random group-membership is readed as no previous personal information about communicators is given
- because of the non-profit character of most networks there is no benefit outside the network or the communicational situation
- most communications are serious

5.3. The Purpose and the rationale

Let us now consider the implications for CMC-user- behavior. What is expected?

FIGURE: EXPECTATIONS ON SELF REFERENCE & SELF ESTEEM IN CMC

	expectations from the theory	operationalization
self reference	Inter-individual social motivations are under the circumstances of the minimal-group-paradigm weaker than in FTF-groups. Thus social behavior is more self-referental than in FTF-groups.	• Identity Scale • Membership Scale
self esteem	Mechanisms for the minimal-group-paradigm are mostly individual and intrapsychic. The so called base-line-conditions reduce the impact of social-structural, i.e. sociological factors. We can conclude a more positive individual and private public self-esteem during CMC than during FTF-communication.	• Private Collective Self Esteem Scale • Public Collective Self Esteem Scale

6. Method

The investigation employed a 2x2 multifactorial design examining the FTF-setting versus the CMC-setting. 200 undergraduate students of a German university were randomly assigned to both conditions. We tested the participating students through electronic mail and by paper and pencil. All of them had previous experience with CMC.

6.1. Participants

Subjects received the eqivalent of US$ 10 for their participation. They where self selected. 45 % were fenales and 54 % males. The average age was 22, ranging from 18 to 32 years.

6.2. Apparatus

We decided to use Luthanen's and Crocker's scales for comparing CMC versus FTF communication. The scale consists of 4 subscales, that belong to 4 factors. Factor 1 describes the evaluation of the group given by each group member. It is entitled „Private collective self esteem". Factor 2 „Public collective self esteem" measures the public reputation of the group. Factor 3, entitled „Identity/Identification scale" measures the importance of the group for the „Personal Identity" of each group member. Factor 4 determines the group member's subjective contribution to the group and is called „Membership scale".
Wagner translated the scale into German and tested on students. His investigation replicated the original 4-factor-structure.

6.3. Procedure

The students read the information about „questionnaires on electronic mail usage" as a poat in the university computerpool. Interested students sent an email to the given address.
We divided the sample randomly into 2 groups. We presented identical text-based material to both the CMC- and the FTF-group. The CMC group was operationalized by receiving the questionnaires as electronic mail, the face-to-face group was the identical paper & pencil test sent home.
To summarize: in both cases we let our respondents rate their in-group, but with different tools thus prompting from different perspectives.

7. Results

7.1. Differences between groups concerning means

What we found was a slightly different factorial structure and highly significant effects of the experimental condition. Let me first present the results on the Crocker/Luhtanen scale. Using t-tests we found significantly different means for factor 1 and 4.

F1„Private collective self esteem": significant group difference

F2 „Public collective self esteem": no difference

F3 „Identity/ Identification scale": no difference

F4 „Membership scale": significant group difference

FIGURE: STATISTICS FOR SELF REFERENCE AND FOR SELF ESTEEM

A) Self reference

	CMC (electronic survey) mean	FTF (paper & pencil) mean	t	p
Identity Scale F3:	-0,1	0,1	-1,85	n.s.
Membership Scale F4:	-0,2	0,2	-3,05	< 0.01

B) Self esteem

	CMC (electronic survey) mean	FTF (paper & pencil) mean	t	p
Private Collective Self Esteem Scale F1:	0,2	-0,2	3,04	< 0.01
Public Collective Self Esteem Scale F2:	0	-0	0,3	n.s.

Thus, in CMC the own group is seen more positive but its importance for group member's personal identity is weaker, just as the importance group members attribute their group is weaker when using CMC.

7.2. Factor Structure

The result leads us to re-analyze the factor structure for both conditions. Therefore we split our data into 2 groups (paper and pencil versus electronic survey) and repeated the data

reduction (as factor analysis with Varimax rotation). Now we can describe the differences caused by the conditions more detailed:

- F1: „Private collective self esteem"/ content: judgment of the group taken by the group member /difference: The Item „I think, that the value of my group is low" was replaced by the Item concerning the positive value of the own group membership. This Item was in the original solution loaded on factor 4 „Membership"
- F2: „Public collective self esteem"/ no significant difference
- F3: „Identity/ Identification scale"/ no significant difference
- F4: „Membership scale"/ content: group members subjective contribution of the group/ difference: mixed items between factor 1 and 4 (see factor 1)

On the whole our factors does not show a clear differentiation between private collective self esteem and membership scale. Compared to the original solution there is no difference on the factors „public collective self esteem" and „Identity".

8. Discussion

8.1. Has the study helped to resolve the originally stated problem?

The original problem was to decide whether and how CMC influences the self-concept of the communicators. Significant differences were found on the two scales „Private collective self esteem" and „Membership scale". However no significant differences were found between CMC and Paper & Pencil communication on the scales „Public collective self esteem" and „Identification". Therefore we have to conclude:

1. CMC cannot be considered as generally impersonal.
2. CMC is not a one-dimensional concept. We suggest a differentiation of various CMC settings and of CMC users.

8.3. What conclusions and theoretical implications can we draw?

The Tajfel/Turner Social Identity approach (SIT) as a social psychological theory was enriched by the recent discussion through Bornewasser & Bober (1987). Considering this discussion we suggest a differentiation between personal and social identity and therefore a distinction of interpersonal versus intergroup behavior. Thus the question was, whether CMC-users act more like group members or more like individuals. According to Tajfels SIT positive personal identity is based on high personal self esteem. Our results show, that the difference between CMC and paper & pencil concerning the private collective self-esteem should be interpreted as a more important relation to the sociological, i.e. social structural dimension in CMC than in FTF-Communication.

9. Summary

Computer Mediated Communication (CMC) has developed as a new field of media psychology and social psychology. It is described by different theoretical approaches. These approaches draw upon a range of divergent pictures. To explain the social character of either text-based CMC we compared three theoretical perspectives. CMC was seen as an impersonal situation (Kiesler, 1984) or as mediated small group (Scholl, 1995) or as a hyperpersonal setting (Walther, 1995). All three approaches consider CMC as a very different way of communication - if compared to Face-To-Face-communication (FTF).

Based on empirical research we found that users of CMC report among a variety of differences between CMC and FTF that communication tends to be more direct, sobject-oriented and less distressed than FTF interaction.

The Tajfel/Turner Social Identity approach (SIT) as a social psychological theory was enriched by the recent discussions on the concept through Bornewasser & Bober (1987). Considering this discussion we suggested a differentiation between personal and social identity and therefore a distinction of interpersonal versus intergroup behavior. So the question arises, whether CMC-users tend to act more like group members or more like individuals.

We hypothesized that communicators would be inclined to judge themselves in a more selfreferential way (Self reference is defined here as such behavior and cognition of an individual that is guided by personal constructs and not by the opinion of others.). Thus, people using CMC were predicted to act more like individuals and less like a group member. This hypothesis is further based on the special characteristic of the media. For example Computer Mediated Interaction has less possible perceptual qualities as Face-To-Face-interaction. In our investigation we took that into account by presenting the same text-based material to both the CMC- and the FTF-group.

The second hypothesis tested is that CMC users would esteem themselves more positively than FTF-communicators. Specifically it was assumed that they would depend less on the opinion of others than FTF-communicators.

We conducted the investigation with a 2x2 multifactorial design testing the FTF-setting versus the CMC-setting. 200 undergraduate students of one German university were randomly assigned to the two conditions. We examined participating students via electronic mail and by paper and pencil. All of them had previous experience with CMC.

Our results made us assume, that the communicational situation is not impersonal. Significant differences between the CMC- and the FTF-setting were found for self esteem and self-reference. Results further showed that the social influence of CMC on others is less effective. We could show, that communicators in CMC are less influenced by the intention of others. The investigation has shown, that the variables are moderated by the time the users uitlize the net and the familiarity, they have developed with that situation.

Overall the findings suggest not to regard CMC necessarily as a group process. Moreover it should be differenciated between different types of CMC, such as email, talk, irc, etc. and the level of experience of users.

Thus, a differentiation into impersonal, small group and hyperpersonal behavior did find support, if we consider these types as separate states of CMC-communication.

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FIGURE: 3 THEORETICAL APPROACHES OF CMC

1. Social Cues Filtered Out Hypotheses (SCFO; Kiesler & Sproull 1986) - CMC as impersonal situation

2. Group Polarization (GP; Lea & Spears 1992) - CMC as small group process

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FIGURE: CONCLUSIONS

1.CMC cannot be considered as generally impersonal.

2.CMC is not a one-dimensional concept. We suggest a differentiation of various CMC settings and of CMC users.